

Remarks

This paper is responsive to the Final Rejection dated July 27, 2005. An RCE is enclosed herewith. Claims 1-13 are present for consideration.

1. It is agreed that claims 4-13 are directed to apparatus.
 2. Please enter the enclosed Amendment to correct "hydrogen" to --hydrocarbon-- in claim 5; thank you!
- 3.4. Claims 1, 3 and 4 are rejected as anticipated by Louder et al (Louder). First, it should be clear that Louder utilizes hydrogen feedback as described at page 2, lines 15-21 of the present application. The "compression" 13 of Louder is precisely a "hydrogen recycle blower 30" referred to on page 2 of this application. It has the same problems as presented in lines 22-24 of page 2 of this application. Further, Louder also will have significant steam in the hydrogen recycle as is described at the bottom of page 2 in this application.

With the hydrodesulfurization beds 5 of Louder in the primary location as shown in the figure, the reform reactor 9 does not have undesulfurized hydrocarbon feed, since it is downstream from the hydrodesulfurization beds 5. If, on the other hand, the hydrodesulfurization beds 5 are placed in location A as shown in sketch 1 herewith, then the hydrogen-rich reformate is produced in hydrogen generator 9 from desulfurized hydrocarbon feed, since it also is downstream of the hydrodesulfurization beds 5.

But if the hydrodesulfurization beds 5 are disposed in alternate location B in Louder, then, only hydrogen-rich reformate, and no undesulfurized hydrocarbon feed, would be fed to the hydrodesulfurization beds 5.

Alternatively, if the hydrodesulfurization beds 5 are disposed in alternate location C, as shown in sketch 3 herewith, there is no undesulfurized hydrocarbon feed being provided to the hydrodesulfurization beds 5, but only the hydrogen-rich reformate.

Similarly, if the hydrodesulfurization beds 5 are disposed in alternate location D, as shown in sketch 4 herewith, only hydrogen-rich reformate is fed, after being compressed in compressor 13; there is no undesulfurized hydrocarbon feed applied to the hydrodesulfurization beds 5 as shown in sketch 4.

Reconsideration and allowance of claim 1 is therefor requested.

With respect to claims 3 and 4, the foregoing arguments apply equally well. If the hydrodesulfurization beds 5 are in the primary location or location A, then the reformer 9 receives desulfurized hydrocarbon feed. If the hydrodesulfurization beds 5 are in alternate locations B, C or D, then the hydrodesulfurization beds 5 do not receive undesulfurized hydrocarbon feed, but only reformate. Therefore, reconsideration and allowance of claims 3 and 4 is hereby requested.

5. Claims 9, 10 and 12 are rejected as anticipated by Buswell et al (Buswell).

This rejection is glaringly inconsistent. On page 4 of the Office Action, the first six lines state that "A first stream of hydrogen-containing reformate gas (stream leaving said generator 154)" and "undesulfurized hydrocarbon feed from said source (stream leaving said generator 154)". 154 in Buswell is an oxidizer to get rid of oxygen in air whenever an air/propane mix is added to the natural gas (column 7, lines 43-52). Buswell, like Louder, utilizes feedback hydrogen (stream 11) which is the same as the prior art described with respect to Fig. 1 in the present application, and includes a recycle compressor 156 (column 8, lines 55-64).

Claim 9 requires that the hydrogen supplied to the desulfurizer be generated separately from the hydrogen provided to the water-gas shift reactor. Claim 9 calls for first and second streams of hydrogen-containing reformate gas; the stream leaving the oxidizer 154 is not reformate gas; the only stream of reformate in Buswell is that found in streams 6, 7, 8, 9, 10 and 11; that comprises a single stream.

The reference to "limitations...directed to a manner of operating disclosed system" is not understood. The recited apparatus is distinctly different from Buswell.

Claims 10 and 12 depend from claim 9 and are patentable for the same reasons. Therefore, reconsideration and allowance of claims 9, 10 and 12 is hereby respectfully requested.

6.7. Claims 2 and 5-8 are rejected as obvious over Louder in view of Hershkowitz. These claims depend from either claim 1 or claim 4 and are patentable for the same reasons. Therefore, reconsideration and allowance thereof is hereby requested.

8. Claims 11 and 13 are rejected as obvious over Buswell in view of Hershkowitz. Claims 11 and 13 depend from claim 9 and are patentable for the same reasons; reconsideration and allowance thereof is hereby requested.

9-15. Should the foregoing not be persuasive, a telephone interview is earnestly solicited.

Respectfully submitted,



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